

IN THE CLAIMS:

Please cancel claims 1-30. This listing of claims will replace all prior versions, and listings, of claims in the application:

31. (new) An apparatus, comprising:

a channel having a backplane interface unit that selects a signal from a backplane, said backplane interface unit coupled to a cross connect table that provides an indication where said signal may be found on said backplane, said indication correlated to a logical label, said logical label correlated to a frame location that said selected signal is transmitted within, said logical label having a value:

- 1) that will remain fixed during the course of recovery from a failure or degradation event on a ring that affects said signal; and,
- 2) that is reserved for said frame location so as to identify said frame location

said ring being a Unidirectional Path Switched Ring (UPSR) or a Bi-directional Line Switched Ring (BLSR).

32. (new) The apparatus of claim 31 further comprising a framing unit that is coupled to an output of said backplane interface unit, said framing unit to provide said frame location for said selected signal.

33. (new) The apparatus of claim 32 further comprising a line interface unit having an input that is coupled to an output of said framing unit.

34. (new) The apparatus of claim 33 wherein said line interface unit further comprises an optical transmitter.

35. (new) The apparatus of claim 33 wherein said line interface unit has an output coupled to a networking line.

36. (new) The apparatus of claim 31 wherein said signal is an STS-1 signal.

37. (new) The apparatus of claim 31 wherein said signal is an STM-1 signal.

38. (new) The apparatus of claim 31 wherein said backplane is a full mesh backplane.

39. (new) A method, comprising:

- a) assigning a logical identification label to a location within an outbound frame that transports an egress signal on a UPSR or BLSR ring, said logical identification label having a value that is reserved for said outbound frame location so as to identify said outbound frame location, and, assigning a physical identification label to a location on a backplane where an ingress signal is found; and,
- b) configuring a portion of a node's switching fabric by correlating said logical identification label to said physical identification label, said logical identification label having a value that will remain fixed

during the course of recovery from a failure or degradation event that affects said ingress signal.

40. (new) The method of claim 39 wherein said configuring further comprises updating entries within a cross connect table.

41. (new) The method of claim 39 wherein said configuring is executed by a node's configuration software.

42. (new) The method of claim 39 wherein said signal is an STS-1 signal.

43. (new) The method of claim 39 wherein said signal is an STM-1 signal.

44. (new) The method of claim 39 wherein said backplane is a full mesh backplane.

45. (new) The method of claim 39 further comprising operating said node by converting said ingress signal into said egress signal.

46. (new) A method, comprising:

a) assigning a logical identification label to a location within an outbound frame that transports an egress signal on a UPSR or BLSR ring, said logical identification label having a value that is reserved for said outbound frame location so as to identify said outbound frame location, and, assigning a physical identification label to a location on a backplane where an ingress signal is found;

- b) configuring a portion of a node's switching fabric by correlating said logical identification label to said physical identification label;
- c) operating said node by converting said ingress signal into said ingress signal; and,
- d) changing said correlation, in response to a networking line failure or degradation event, by replacing said physical identification label with a second physical identification label while keeping said logical identification label unchanged.

47. (new) The method of claim 46 wherein said second physical identification label corresponds to a location on said backplane where a second ingress signal is found, said second ingress signal a protection signal to said ingress signal.

48. (new) The method of claim 47 wherein said ingress signal and said second ingress signal are received as part of a 1+1 protection scheme.

49. (new) The method of claim 37 wherein said ingress signal and said second ingress signal are received as part of a 1:N protection scheme.

50. (new) The method of claim 46 wherein said second physical identification label corresponds to a second location on said backplane where a second ingress signal is found, said changing causing the transmission of second egress signal within said location, said second ingress signal a duplicate of a signal on said failed or degraded networking line, said second ingress signal converted to said second egress signal.

51. (new) The method of claim 50 wherein said egress signal and said second egress signal are transmitted as part of a 1:N protection scheme.

52. (new) An apparatus, comprising:
a network node having a backplane and a line card for connecting to a ring, said line card having an egress channel with a backplane interface unit that selects a signal from said backplane, said backplane interface unit coupled to a cross connect table that provides an indication where said signal may be found on said backplane, said cross connect table correlating said indication to a logical label, said logical label correlated to a frame location that said selected signal is transmitted within, said logical label having a value that:

1) will remain fixed over the course of recovery from a degradation or failure event on said ring that affects said signal and

2) that is reserved for said frame location so as to identify said frame location,

said ring selected from the group consisting of:

1) a UPSR ring;

2) a BLSR ring.

53. (new) The apparatus of claim 52 wherein said egress channel further comprises a framing unit that is coupled to an output of said backplane interface, said framing unit to provide said frame location for said selected signal.

54. (new) The apparatus of claim 53 further comprising a line interface unit having an input that is coupled to an output of said framing unit.

55. (new) The apparatus of claim 54 wherein said line interface unit further comprises an optical transmitter.

56. (new) The apparatus of claim 54 wherein said line interface unit has an output coupled to a networking line.

57. (new) The apparatus of claim 53 wherein said signal is an STS-1 signal.

58. (new) The apparatus of claim 53 wherein said signal is an STM-1 signal.

59. (new) The apparatus of claim 53 wherein said backplane is a full mesh backplane.

60. (new) The apparatus of claim 52 further comprising a second line card having a second egress channel with a second backplane interface unit that selects a second signal from said backplane, said second backplane interface unit coupled to a second cross connect table that provides an indication where said second signal may be found on said backplane, said second cross connect table correlating said indication to a second logical label, said second logical label correlated to a location within a second frame that said selected second signal is transmitted within, said logical label having a value that: 1) will remain fixed over the course of recovery from a degradation or failure event that affects said second signal and 2) that is reserved for said second frame location so as to identify said second frame location.

61. (new) An apparatus, comprising:

a switch having a full mesh architecture, said switch further comprising:

a) a first egress channel having a first backplane selection unit that selects a first signal from a first backplane location for inclusion within a frame that is transmitted upon a first outbound networking line, said first outbound networking line part of a UPSR or BLSR ring, said first backplane location correlated to a first logical label, said first logical label correlated to a location within said frame that is transmitted upon said first outbound networking line, said logical label having a value:

- 1) that will remain fixed over the course of recovery from a degradation or failure event that affects said first signal and
- 2) that is reserved for said location so as to identify said location within said frame that is transmitted upon said first outbound networking line; and,

b) a second egress channel having a second backplane selection unit that selects a second signal from a second backplane location for inclusion within a frame that is transmitted upon a second outbound networking line, said second backplane location correlated to a second logical label, said second logical label correlated to a location within said frame that is transmitted upon said second outbound networking line, said logical label having a value:

- 1) that will remain fixed over the course of recovery from a degradation or failure event that affects said second signal and

2) that is reserved for said location within said frame that is transmitted upon said second outbound networking line so as to identify said location within said frame that is transmitted upon said second outbound networking line.

62. (new) The apparatus of claim 61 wherein a unique logical label is provided for each signal that is transmitted by said switch.

63. (new) The apparatus of claim 61 wherein a unique logical label is provided for each STS-1 signal that is transmitted by said switch.

64. (new) The apparatus of claim 61 wherein a unique logical label is provided for each STM-1 signal that is transmitted by said switch.

65. (new) The apparatus of claim 61 wherein at least one of said outbound networking lines is a fiber optic cable.

66. (new) The apparatus of claim 61 wherein at least one of said outbound networking lines is an electrical cable.

67. (new) The apparatus of claim 61 further comprising:

- a) a first table that provides said correlation between said first backplane location and said first logical label; and,
- b) a second table that provides said correlation between said first logical label and said location within said frame that is transmitted upon said first outbound networking line.

68. (new) The apparatus of claim 61 wherein said first egress channel is located on a first line card and said second egress channel is located on a second line card.

69. (new) The apparatus of claim 61 further comprising:

a) a third egress channel having a third backplane selection unit that selects a third signal from a third backplane location, said third egress channel having a path termination unit coupled to an output of said third backplane selection unit so that said path termination unit can receive said third signal.

70. (new) A networking switch, comprising:

a) means for assigning a logical identification label to a location within an outbound frame that transports an egress signal on a UPSR or BLSR ring, said logical identification label having a value that: 1) remains fixed over the course of recovery from a degraded or failed line that assists in sourcing said egress signal to said networking switch and 2) uniquely identifies said egress signal;

b) means for assigning a physical identification label to a location on a backplane where an ingress signal is found; and,

c) means for configuring a portion of a node's switching fabric by correlating said logical identification label to said physical identification label.

71. (new) The networking switch of claim 70 further comprising means for changing said configuration, if a networking line fails or degrades, by correlating said logical identification label to a second physical identification label.

72. (new) The networking switch of claim 71 wherein said second physical identification label corresponds to a second backplane location where a protection signal for said egress signal is found, said failed or degraded networking line corresponding to a working source for said egress signal.

73. (new) The networking switch of claim 72 wherein each of said signals are STS-1 signals.

74. (new) The networking switch of claim 72 wherein each of said signals are STM-1 signals.

75. (new) The networking switch of claim 71 wherein said second physical identification label corresponds to a second backplane location where a duplicate of a signal upon said failed or degraded networking line is found, said duplicate signal converted to a second egress signal, said failed or degraded networking line and a line over which said second egress signal is transported being part of a 1:N protection group.